

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims

1. (Original) A HBV precore protein that has an ability of forming the core-like particles of HBV and that contains all or part of the signal sequence.
2. (Original) A HBV precore protein that has an ability of forming the core-like particles of HBV, in which the N-terminal of the amino acid sequence is at position -28 and the C-terminal is at positions 150-154.
3. (Original) The HBV precore protein according to claim 1 comprising the amino acid sequence as set forth in SEQ ID NO: 1.
4. (Currently Amended) HBV core (like) particles or HBV virus (like) particles comprising the HBV precore protein according to claim 1 ~~any one of claims 1 to 3~~.
5. (Currently Amended) A HBV vaccine or a therapeutic agent comprising the HBV precore protein according to claim 1 ~~any one of claims 1 to 3~~.
6. (Currently Amended) A HBV diagnostic reagent or a diagnostic kit comprising the HBV precore protein according to claim 1 ~~any one of claims 1 to 3~~.
7. (Currently Amended) A method of determining the HBV precore protein according to claim 1 ~~any one of claims 1 to 3~~.
8. (Currently Amended) The method according to claim 7 comprising the step of exposing the HBV precore protein ~~according to any one of claims 1 to 3~~ and the step of binding to a probe that recognizes the HBV precore protein.
9. (Currently Amended) The method according to claim 7 ~~or 8~~ wherein said step of exposing the HBV precore protein is treatment with, or addition of, a surfactant.

10. (Currently Amended) The method according to claim 7 ~~any one of claims 7 to 9~~ wherein said surfactant is any of an anionic surfactant, an anionic surfactant and an ampholytic surfactant, or an anionic surfactant, an ampholytic surfactant and a nonionic surfactant.

11. (Currently Amended) The method according to claim 7 ~~any one of claims 7 to 10~~ wherein said probe that binds to the HBV precore protein is a probe that binds to the positions -28 to -11 of the amino acid sequence, or a probe that specifically binds to the HBV precore protein ~~according to any one of claims 1 to 3~~ and that does not bind to HBe antigen or HBc antigen.

12. (Currently Amended) The method according to claim 7 ~~any one of claims 7 to 11~~ wherein said probe that binds to the HBV precore protein is an antibody.

13. (Currently Amended) The method according to claim 7 ~~any one of claims 7 to 12~~ wherein said antibody is a combination of two or more of antibodies that recognize positions 1 to 19, an antibody that recognizes positions 21 to 40, an antibody that recognizes positions 31 to 49, an antibody that recognizes positions 130 to 140, and an antibody that recognizes the structural region of positions 1 to 81 of the amino acid sequence.

14. (Original) A method of determining particulate HBV precore/core protein which comprises (immuno) precipitating with a probe such as anti-HBs antibody that binds to HBs antigen and determining the HBV precore/core protein in the precipitate.

15. (Currently Amended) A method of determining the value of the particulate HBV precore/core protein in a sample wherein it is calculated by subtracting the measured value of the HBe antigen when the value of the HBe antigen is included in the measured value of the HBV precore protein determined by a method described in claim 7 ~~any one of claims 7 to 13~~.

16. (Currently Amended) A method of determining the value of the particulate HBV precore protein in a sample wherein it is calculated by subtracting the measured value of the HBe antigen from the measured value of the HBV precore/core protein determined by a method described in claim 7 ~~any one of claims 7 to 15~~.

17. (Currently Amended) A method of using the determination of the HBV precore protein determined by a method described in claim 7 ~~any one of claims 7 to 16~~ as a pathological marker for HBV infection or type B hepatitis.
18. (Original) A diagnostic reagent comprising an assay kit comprising an anionic surfactant and an antibody that recognizes the amino acids at positions -28 to 150 of the HBV precore protein, and a kit for determining HBe antigen.
19. (Original) An assay kit and a diagnostic reagent comprising an anionic surfactant, an antibody that recognizes the amino acids at positions -28 to 150 of the HBV precore/core protein, and, an antibody that separates the particulate HBV precore/core protein and the HBe antigen.
20. (Currently Amended) A method of detecting an antibody against the HBV precore protein according to claim 1 ~~any one of claims 1 to 3~~.
21. (Original) An assay kit and a diagnostic reagent for determining an antibody against the particulate HBV precore protein comprising the HBV precore protein.